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NONCONTINGENT REINFORCEMENT: AN INAPPROPRIATE DESCRIPTION OF TIME-BASED SCHEDULES THAT REDUCE BEHAVIOR

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Several articles published recently in the *Journal of Applied Behavior Analysis* demonstrate that fixed-time (FT) schedules can be used to reduce troublesome behaviors (for a review of these and related articles, see Tucker, Sigafoos, & Bushell, 1998). In the first article in this series, Vollmer, Iwata, Zarcone, Smith, and Mazaleski (1993) demonstrated through functional analysis that the self-injurious behavior of 3 women was maintained by attention. Subsequently, they reduced the self-injurious behavior of those women by delivering attention under an FT schedule. They referred to the FT schedule as a noncontingent reinforcement procedure, and the name unfortunately has stuck. For example, in the most recent article in the series, Carr, Bailey, Ecot, Lucker, and Weil (1998) indicate that "In a noncontingent reinforcement (NCR) procedure, the reinforcer responsible for maintaining a problem behavior is delivered on a fixed-time (FT) or variable-time schedule" (p. 313).

It is standard practice in behavior analysis to define reinforcement functionally, that is, as an operation or process in which the occurrence of a behavior is followed by a change in the environment (reinforcer) and as a result such behavior subsequently increases in rate, or is otherwise strengthened (e.g., Catania, 1991; Chance, 1998; Miltenberger, 1997). Operations that have other effects characteristically are not referred to as reinforcement. If this convention is followed, delivery of attention under an FT schedule did not constitute reinforcement in the Vollmer et al. (1993) article, because no measured behavior increased in frequency (or was otherwise strengthened) under this condition. In fact, the only reported behavior decreased in rate. Vollmer et al. proposed that satiation, extinction, or both were responsible for the reductions in self-injurious behavior produced by the FT schedule; they made no reference to the process of reinforcement in discussing their findings. Delivery of attention (apparently under a fixed-ratio 1 schedule, although this is not specified) during the attention condition of the functional analysis did constitute reinforcement, because self-injury occurred at the highest rate under this condition.

It is recognized in both basic and applied research that the behavioral functions of a given stimulus are not fixed; rather, they vary depending on a wide variety of variables, including the schedule under which that stimulus is arranged. The fact that a stimulus is a positive reinforcer in one context does not justify terming it a positive reinforcer in a context in which its delivery reduces responding. Doing so is a misapplication of the term *reinforcement* and does not explain how FT deliveries of a stimulus reduce behavior.[1]

Of course, none of the foregoing detracts from the quality of the studies that have used time-based schedules to reduce behavior, nor does it detract from the applied significance of their findings. In our opinion,

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[1] One could also question the proper definition of *noncontingent,* a term used in multiple and inconsistent ways by behavior analysts (see Lattal & Poling, 1981). Because the most common usage is synonymous with *response independent,* we have chosen to ignore the issue.

the work is good and the results are important. Our sole quarrel is with terminology. Why not forgo the term *noncontingent reinforcement* unless behavior is demonstrably strengthened, and simply refer to FT schedules by that name? Abandoning bad precedent is good practice.

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